

# ADOLESCENT OBSESSIVE-COMPULSIVE DRINKING SCALE: AN ASSESSMENT TOOL FOR PROBLEM DRINKING

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Alcoholism has been studied in adults and found to share obsessive-compulsive characteristics. The Yale-Brown Obsessive Compulsive Scale (YBOC) was used to quantify the measurements of this disorder. This study adapted the YBOC for use with adolescents/young adults in an attempt to measure the "craving" expressed as obsessive and compulsive phenomenon. The primary findings show that the obsessive compulsive dimensions of alcohol cravings, as described in adult populations, also exist in adolescent/young adults. The Adolescent Obsessive Compulsive Drinking Scale (A-OCDS) was developed utilizing idioms and language typical for the 17–20 age group. Various quantitative evaluations proved that the Interference and Irresistibility sub-scales were the primary dimensions causing the obsessive behavior. This study begins to address this aspect of adolescent substance abuse utilizing a tool that is easy to administer. Because of the ease of use, although not a diagnostic instrument, the A-OCDS may be useful for identifying problem drinking in adolescents as well as detecting impairment in function related to drinking. (*J Natl Med Assoc.* 2001;93:92–103.)

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**Key words:** adolescents ♦ alcohol  
♦ obsessive-compulsive drinking scale

Alcoholism shares some phenomenology with obsessive-compulsive disorder<sup>1,2</sup> such as characteristics of intrusive, unwelcome thoughts and urges of drinking and repetitive drinking patterns often not under complete conscious control. These thoughts or urges of drinking, often described as "craving,"<sup>3,4</sup> have been linked to the maintenance of drinking as well as relapse<sup>5</sup> and alcohol withdrawal.<sup>6</sup> These phenomena have overwhelming clinical and research

implications, which may directly impact treatment as well as longer term prognosis.

The quest to understand these phenomena prompted many researchers to develop quantifiable measures of the obsessive and compulsive phenomenon associated with alcoholism. The Yale-Brown Obsessive-Compulsive Scale (Y-BOCS)<sup>7</sup> was modified by Modell and colleagues<sup>3</sup> into a 10-item interview-rated questionnaire known as the Y-BOCS for heavy drinking (Y-BOCS-hd) in order to quantify associated alcohol obsessive and compulsive features. The YBOCS-hd was validated in a sample of adults who met DSM-III-R criteria for alcohol abuse or dependence and was found to have high sensitivity and specificity for the detection of alcohol-related phenomenon compared to normal drinkers.

In an attempt to expand the usefulness of such

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instruments in clinical evaluations, measure changes over time in treatment studies and enhance the effectiveness of cost and time, Anton and colleagues<sup>4</sup> modified the Y-BOCS-hd into the Obsessive Compulsive Drinking Scale (OCDS). The OCDS is a valid, reliable, 14-item self-report instrument which has high internal consistency and test-retest reliability. The 14 items are rated from 0 to 4, indicating “no symptoms” to “marked symptoms” with regards to frequency of thoughts about drinking, efforts made to resist the thoughts, distress caused by these thoughts as well as frequency and intensity of drinking. The OCDS was originally thought to possess two identified subscales, the obsessive thoughts of drinking subscale and the compulsive alcohol use subscale. Bohn and colleagues<sup>8</sup> have suggested that four latent factors underlie responses to the OCDS, namely, alcohol obsessions, alcohol consumption, automaticity and interference with drinking. However, Roberts and colleagues<sup>9</sup> have argued that only three factors are needed to explain relationships among item responses; resistance/control, obsession and interference. The OCDS has been shown to be a useful instrument for predicting relapse as well as a measure of outcome in pharmacological treatment studies.<sup>10,11</sup>

An extensive review of the literature revealed no instruments specifically designed to measure craving in adolescents or young adults. The OCDS was validated and used in adult alcohol populations, not adolescent/young adults. It is unknown whether the OCDS would function similarly in adolescent/young adult populations or whether it would be sensitive to the typical episodic binge pattern of drinking often seen among adolescents and young adults. It is also unknown whether this instrument accommodates the level of cognitive and social development of adolescents and young adults with regards to alcohol use or how their urges and desires are conceptualized. Also, it is important to determine whether adolescents/young adults have similar alcohol “craving” as manifested by obsessive and compulsive phenomenology. To this end, we sought to extend and revise the OCDS to form the Adolescent Obsessive Compulsive Drinking Scale (A-OCDS) (see Appendix) for the use in adolescent/young adult populations. Our study was designed to modify the OCDS to form the A-OCDS, evaluate the factor structure of the A-OCDS, develop summated scales to measure these factors, examine the reliability of the scales, determine the

sensitivity and specificity of the scales in classifying problem drinkers and establish initial evidence for construct validity.

## METHODS

To revise the OCDS for an adolescent/young adult population, clinicians and researchers from the Adolescent Substance Abuse Program (ASAP) and the Center for Alcohol and Drug Programs (CDAP) at the Institute of Psychiatry, Medical University of South Carolina reviewed the OCDS and made suggestions regarding the wording of the instrument. For example, the terms “impulses” and “anxiety” on the OCDS were replaced respectively with “strong desires” and “irritable, upset or nervous” on the A-OCDS. Interference questions on the OCDS referred to social or work functioning, while the A-OCDS related interference to social activities, family activities and school functioning. After these minor changes were made, six focus groups were held with treatment seeking inpatient and outpatient substance abusing adolescents in the ASAP to evaluate their understanding of the questions and acceptability of the questionnaire. These adolescents served in part, as consultants in the revision of the instrument. The adolescents gave suggestions regarding the language of the instrument and how certain constructs may be operationalized. After revisions, the reading level of the A-OCDS was determined to be at the fifth grade level.<sup>12</sup> The A-OCDS was then given to 25 inpatient and outpatient adolescents with alcohol use disorders to determine the feasibility of the use of the A-OCDS in an adolescent/young adult population.

The A-OCDS was subsequently administered to 228 adolescents/young adults aged 17–20 enrolled at the College of Charleston. The Institutional Review Board (IRB) of the college and The Medical University of South Carolina approved the study. Informed consent was obtained from the participants. The A-OCDS was administered as an attached questionnaire given in conjunction with the national CORE Alcohol and Drug Survey,<sup>13</sup> a self-report two-page questionnaire given annually to assess the prevalence of alcohol and drug use on college campuses. Professors from various academic departments at the college were contacted regarding their willingness to allow the administration of the CORE survey and the A-OCDS during the last 15 minutes of scheduled classes. Subjects therefore represented

a cross-section of the population at the college regarding age, classification, course enrollment and majors. After completing the CORE survey, subjects took approximately 5 minutes to complete the A-OCDS.

## Statistical Analysis

**Exploratory Factor Analysis and Subscale Development.** A factor analysis was conducted to determine the dimensionality of item responses and to identify with which of these dimensions each item was most correlated. The number of factors extracted in the ultimate factor analysis was initially determined from the eigenvalues of the corresponding inter-item correlation matrix. Results from a scree test procedure,<sup>14</sup> Kaiser's eigenvalues greater than 1 rule,<sup>15</sup> and a bootstrapped version of the parallel analysis criterion<sup>16</sup> were concomitantly used to determine the optimal number of factors to extract. This latter heuristic method relied on a bootstrapping procedure in which observations from a given variable were resampled independently and this resampling was repeated for each variable. A correlation matrix was then built from these data and the corresponding eigenvalues were calculated. The entire process was repeated 100 times, and the resulting eigenvalues were averaged over replications. A dimension was deemed worthy of interpretation when its associated eigenvalue exceeded the corresponding average eigenvalue derived in the parallel analysis (i.e., when an eigenvalue was greater than that obtained, on average, from random data). Factor extraction was conducted using an iterated principal axis technique with squared multiple correlations as initial communality estimates.<sup>17</sup> The initial solution was obliquely rotated using a Promax criterion with  $k = 4$ . To create measurable subscales, each item was assigned to the factor with which it correlated the most. Subscale scores were derived by summing the item responses for those items assigned to a given scale after reverse scoring any item that exhibited a negative correlation with the factor in question. The internal consistency of item responses on each subscale was assessed using Cronbach's alpha.

**Receiver Operating Characteristic (ROC) Curve Analysis and Identification of Cut Scores.** Individuals were classified into nonproblematic drinking (ND) and problematic drinking categories (PD) based on their self-reported drinking activity during the prior

two weeks. Specifically, any individual who reported having "five or more drinks at a sitting" on two or more occasions during the preceding two weeks was classified into the PD category, whereas all other individuals were classified into the ND category. (This criterion was generated by several child/adolescent psychiatrists board-certified in addiction psychiatry and practicing as clinicians/researchers at multiple institutions.) The sensitivity and specificity characteristics of each subscale score with regard to correct classification of individuals in these two categories was examined via ROC curve analysis. The area under each ROC curve was calculated separately for each subscale using a trapezoidal method, and the difference in these areas between pairs of subscales was tested using chi-square test for correlated samples.<sup>18</sup> Additionally, the statistical significance of correct classifications was assessed using logistic regression in which category membership was regressed on a given subscale score. A cut score for each subscale was also derived from the logistic regression to optimally classify individuals into the ND and PD groups. The derivation was based on the lowest subscale score that yielded a PD classification probability of 50% or more.

**Construct Validation.** Several variables on the CORE Survey were thought to be theoretically relevant to the notion of interference and irresistibility. The variables identified included: preference for alcohol or drugs at parties, average number of drinks consumed per week, number of days using alcohol during the past 30 days, and frequency of alcohol use in the past year. We hypothesized that A-OCDS subscales scores would increase as the quantity and frequency of alcohol use increased and as the preference for alcohol or drugs at parties increased. Additionally, the relationship between the A-OCDS subscales and family history of alcohol or other drug problems were explored although no a priori predictions were postulated for this variable. The relationship between the aforementioned responses and the A-OCDS subscales (interference, irresistibility, and irresistibility-corrected) were explored using independent *t*-test, ANOVA and correlation coefficient analyses.

## RESULTS

### Sample Characteristics

The characteristics of the sample are shown in Table 1. The sample was primarily white (82%),

**Table 1. Subject Characteristics**

N = 228	
Age (mean $\pm$ SD)	19.2 yr $\pm$ 0.818
Ethnicity	
African American	26 (11.4%)
White	187 (82.0%)
Other*	15 (6.6%)
Gender†	
Male	61 (26.8%)
Female	166 (72.8%)
Class	
Freshman	65 (28.5%)
Sophomore	72 (31.6%)
Junior	84 (36.8%)
Senior	7 (3.1%)
Family alcohol or drug problems	
Mother and/or Father	47 (20.6%)
Grandparent(s)	83 (36.4%)
Brother(s)/Sister(s)	29 (12.7%)

\*American Indian/Alaskan Native, Hispanic, Asian/Pacific Island

†One subject did not respond to gender item.

almost three-fourths female (73%) and the average age was  $19.2 \pm 0.818$ . The overrepresentation of females is consistent with the proportion of females enrolled at the college. Of the 9,548 students enrolled at the College of Charleston during Fall 1998, 62% were females (Admission Office, College of Charleston). The sample was almost evenly split between the freshman, sophomore and junior classes, comprising 65 (28.5%), 72 (31.6%), and 84 (36.8%) subjects, respectively. Seniors comprised only 7 (3.1%) of the sample. Family history was defined as having a parent, grandparent or sibling with an alcohol or other drug problem. Family history of alcohol or other drug problems was reported by 50% of the sample. Subjects reported having a mother/father, grandparent(s), and brother(s)/sister(s) with a family history of alcohol or other drug problems at rates of 20.6%, 36.4% and 12.7% respectively.

Alcohol use data are shown in Table 2. The modal age of first alcohol consumption of this sample was 14–15 years old. Greater than half (55.9%) of the sample drank on average more than 5 drinks per week, nearly one-fifth (18.5%) drank between 11 and 20 drinks/week and 14% drank more than 20 drinks/week. Nearly two-thirds (62%) of the sample reported binge drinking (5 or more drinks in a sitting in the past two-weeks prior to the survey)

**Table 2. Alcohol Use Within the Sample\***

Modal age of first alcohol use	14–15 yr
Average number of drinks/week	
<5 drinks	98 (44.1%)
5 to 10 drinks	52 (23.4%)
11 to 20 drinks	41 (18.5%)
>20 drinks	31 (14.0%)
Number of times had 5 or more drinks at a sitting in the past 2 weeks	
None	86 (37.9%)
Once	27 (11.9%)
Twice	39 (17.2%)
3 to 5 times	46 (20.3%)
>6 times	29 (12.8%)
Number of days drinking during past 30 days	
0 days	42 (18.4%)
1–2 days	25 (11.0%)
3–5 days	40 (17.5%)
6–9 days	51 (22.4%)
10–19 days	50 (21.9%)
20–29 days	20 (8.8%)

\*Number of respondents differ slightly across items due to missing data.

on at least one occasion. On the other hand, one-third (33%) reported 5 or more drinks in a sitting greater than 3 times in the past two weeks. More than half (53%) of the sample reported drinking on more than 6 days in the past 30 days prior to the questionnaire, while nearly one-third (31%) reported drinking on more than 10 days in the past 30 days. Problem drinking was defined as two or more episodes of drinking five or more drinks at a sitting within the past two weeks. Using this criterion, 46% of the sample was identified as problem drinkers.

**Factor Analysis.** The eigenvalues of the interitem correlation matrix are displayed in Figure 1 along with the average eigenvalue derived in the parallel analysis. The scree plot heuristic suggested that either two or three primary dimensions were inherent in the data while both the Kaiser and the parallel analysis criteria suggested two primary dimensions. Based on these results (and the subsequent interpretation of factors) a two-dimensional exploratory factor analysis solution was sought. The oblique Promax rotation derived from the initial two-factor solution produced a +0.55 correlation between factors. Table 3 illustrates the factor structure coefficients and the reference vector coefficients

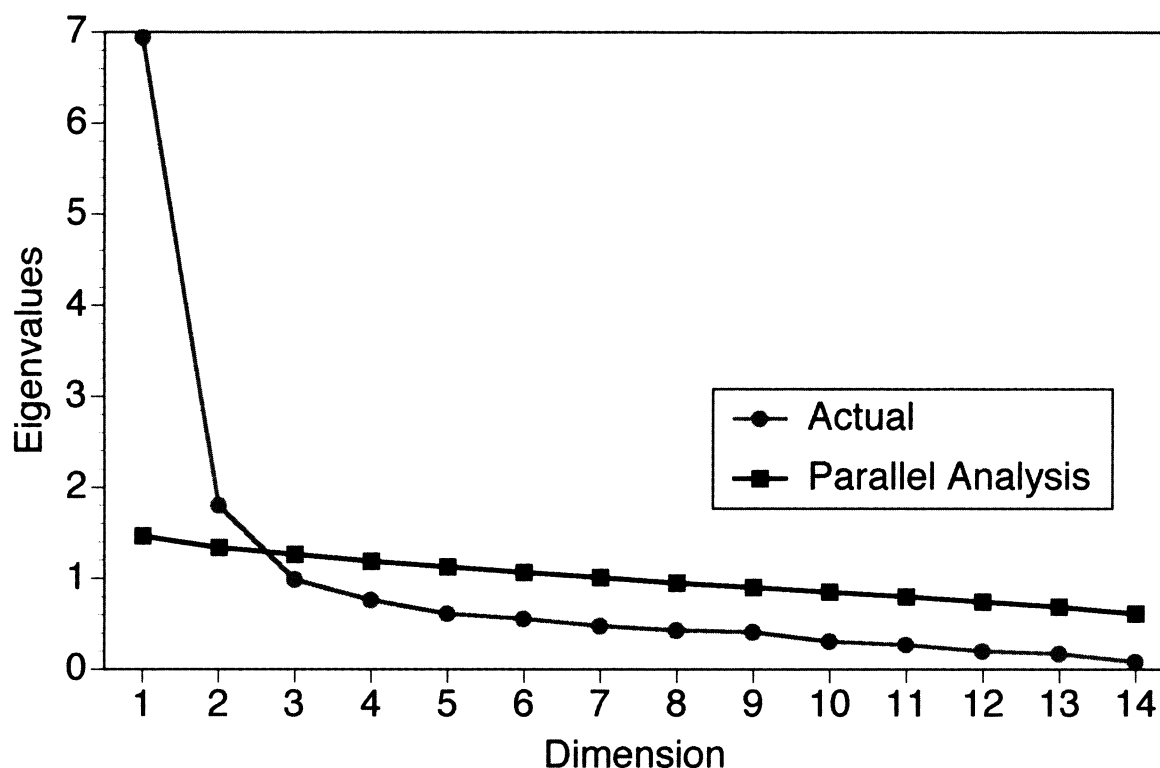


Figure 1. Eigenvalues of the interitem correlation matrix and those found in the parallel analysis.

from this rotation along with the final communalities for each item. The communalities ranged from 0.41 to 0.74, and thus, the proportion of item variance accounted for by the solution appeared reasonable. When items were assigned to one of the two factors based on structure coefficients, the first factor contained 8 items, whereas the second factor contained 6 items. Interestingly, the reference vector structure led to the same assignment of items to factors (as did an assignment based on the pattern coefficients from an orthogonal varimax rotation)<sup>19</sup> which suggested that the ultimate item assignments were robust. Upon examining the content of the items assigned to each factor, the factors were consequently interpreted as “Irresistibility” and “Interference,” respectively.

**Internal Consistency.** The Cronbach’s alpha for the Irresistibility subscale and the Interference subscale were both equal to 0.87. The Irresistibility subscale included two items that specifically pertained to drinking behavior (“How many drinks of alcohol do you drink each day?” and “How many days each week do you drink alcohol?”). Some researchers using the original OCDS have suggested

that these items be deleted when exploring the relationship between OCDS scores and other drinking outcomes.<sup>20</sup> On the basis of this suggestion, these two drinking items were removed from the Irresistibility subscale. The resulting subscale, referred to as the Irresistibility-C (i.e., Irresistibility-Corrected) subscale, had a Cronbach’s alpha equal to 0.81.

**Logistic Regression.** Logistic regressions were performed by regressing the problem drinking classification variable (i.e., the ND/PD classification indicator) on each subscale separately. The results of each regression analysis are given in Table 4. The predictive value of each type of subscale score was statistically significant. The point biserial correlation coefficients ranged from 0.64 for the Irresistibility subscale to 0.34 for the Interference subscale. The  $-2LL$  (minus 2 times the log-likelihood for the given regression equation) indices also suggested that the Irresistibility regression equation was the better fitting model for predicting problematic drinking.

The logistic regressions were used to find cut scores for each subscale, at which, an individual had

Table 3. Results from Two-factor Promax Rotation

Item no.	Content	Factor Structure		Reference Vector Structure		
		Irresistibility Factor 1	Interference Factor 2	Irresistibility Factor 1	Interference Factor 2	Communality
7.	How many drinks of alcohol do you drink each day?	<b>0.77</b>	0.33	<b>0.70</b>	-0.10	0.60
8.	How many days each week do you drink alcohol?	<b>0.77</b>	0.28	<b>0.74</b>	-0.17	0.62
1.	How much of your time in a day when you're not drinking alcohol do you have ideas, thoughts, strong desires or images related to drinking?	<b>0.75</b>	0.51	<b>0.57</b>	0.11	0.58
13.	How strong is your desire to drink alcoholic beverages?	<b>0.75</b>	0.56	<b>0.53</b>	0.17	0.59
2.	How frequently do these thoughts occur?	<b>0.72</b>	0.44	<b>0.57</b>	0.06	0.52
11.	If you were prevented from drinking alcohol when you wanted to drink, how irritable, upset, or nervous would you become?	<b>0.67</b>	0.60	<b>0.40</b>	0.28	0.52
12.	How hard do you try to avoid using alcoholic beverages? (Only tell how hard you try to avoid drinking, not whether you were successful or not.)	<b>0.64</b>	0.42	<b>0.49</b>	0.08	0.42
14.	How much control do you have over drinking alcohol?	<b>0.64</b>	0.56	<b>0.40</b>	0.25	0.47
3.	How much do these ideas, thoughts, strong desires, or images related to drinking alcohol get in the way of your social activities, family activities or school work? Are there things that you don't do because of them (i.e. sports, family outings, etc)?	0.49	<b>0.86</b>	0.02	<b>0.71</b>	0.74
6.	How successful are you in stopping or changing these thoughts about alcohol when you are not drinking?	0.45	<b>0.84</b>	-0.01	<b>0.71</b>	0.71
5.	How hard do you try to resist these thoughts of alcohol or try to ignore or get the thoughts of alcohol out of your mind when you are not drinking? (Tell how hard you try, not whether you succeed or fail.)	0.46	<b>0.82</b>	0.01	<b>0.68</b>	0.68
9.	How much does your drinking alcohol get in the way of your school work? Do you miss school, use alcohol before or at school or experience a decline in grades? (If you are not currently in school, how much of your performance would be affected if you were in school?)	0.68	<b>0.72</b>	0.34	<b>0.42</b>	0.64
10.	How much does your drinking alcohol get in the way of your social or family functioning? (Have you missed or stopped attending family functions, changed friends, or lost interest in hobbies?)	0.42	<b>0.64</b>	0.08	<b>0.49</b>	0.42
4.	When you are not drinking alcohol, how upset are you about these ideas, thoughts, strong desires or images of alcohol?	0.26	<b>0.63</b>	-0.10	<b>0.58</b>	0.41

Dominant factor structure and reference vector structure coefficients for each item are in bold type.

Table 4. Results of Logistic Regression to Predict Drinking Classifications

Subscale	Constant	Regression coefficient	Standardized regression coefficient	Regression coefficient Wald chi-square	p	Odds ratio	-2LL	Point biserial correlation
Irresistibility	-2.74 (0.40)	0.51 (0.07)	1.42	51.45	0.0001	1.66	175.3	0.64
Irresistibility-C	-1.64 (0.27)	0.53 (0.08)	1.05	45.79	0.0001	1.71	209.5	0.56
Interference	-0.51 (0.17)	0.75 (0.19)	1.04	16.23	0.0001	2.13	254.2	0.34

Standard errors are given in parentheses. -2LL refers to -2 times the log-likelihood for the given regression equation.

a 50% or greater chance of being in the PD category. The cut score for Irresistibility was equal to 6, whereas that for Irresistibility-C was equal to 4. The cut score for the Interference subscale was equal to 1.

**ROC Curve Analysis.** The ROC curves derived for the Irresistibility, Irresistibility-C, and Interference subscales are shown in Figure 2. The area under the curve for each of these subscales was equal to 0.89, 0.84 and 0.73, respectively. Statistical tests for differences in the areas associated with each pair of sub-

scales were all significant ( $p < 0.001$ ). Thus, the two drinking items on the Irresistibility subscale appeared to generally improve the overall classification of ND and PD subjects. Moreover, both the Irresistibility and the Irresistibility-C subscales provided better overall classification than did the Interference subscale. The sensitivities associated with the cut scores (given above) for Irresistibility, Irresistibility-C and Interference were equal to 0.76, 0.69 and 0.57, respectively. Similarly, the specificities at these cut scores were equal to 0.88, 0.87 and

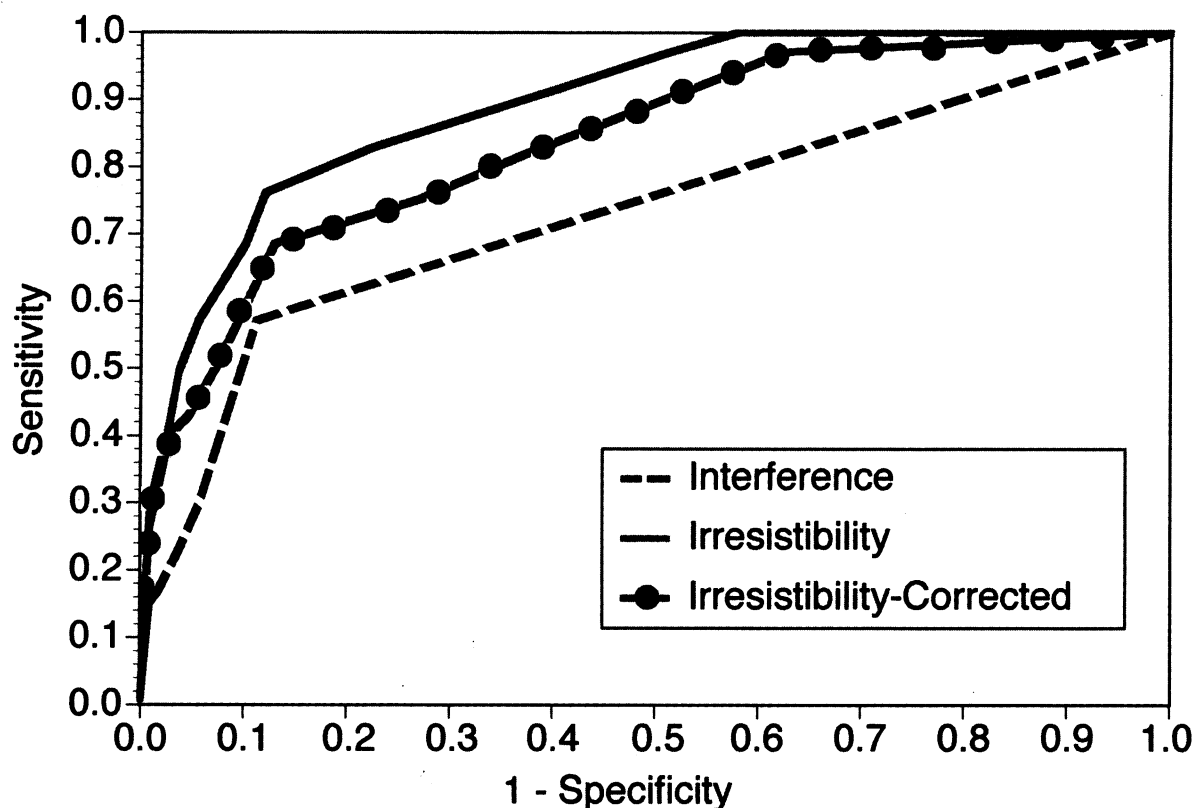


Figure 2. ROC curves for A-OCDS subscales.

Table 5. Validation of Interference and Irresistibility Subscales

Construct-Related Measures	Interference (mean ± SD)	Irresistibility (mean ± SD)	Irresistibility-Corrected (mean ± SD)	Statistic‡
Alcohol preference at parties				Irresistibility
Prefer	1.08 ± 2.37	6.81 ± 5.00	3.98 ± 3.60	unequal variances $t = 10.19$ ; $df = 95.74$ ; $p < 0.001$
Do not prefer	0.45 ± 1.55	1.27 ± 2.13	0.8667 ± 1.5	Irresistibility-Corrected unequal variances $t = 8.12$ ; $df = 100.69$ ; $p < 0.001$
Family History*				Interference
Positive	1.13 ± 2.42	6.47 ± 4.86	3.80 ± 3.69	$F(1,219) = 28.322$ ; $p < 0.001$
Negative	1.02 ± 2.50	5.62 ± 5.25	3.30 ± 3.41	Irresistibility $F(1,213) = 149.478$ ; $p < 0.001$
Mean no. of drinks per week†	$r = 0.41$	0.76	0.66	Irresistibility-Corrected $F(1,215) = 98.337$ ; $p < 0.001$
Frequency of use in past year†	$r_s = 0.46$	0.76	0.62	$p < 0.001$
Days of use in past 30 day†	$r_s = 0.49$	0.81	0.68	$p < 0.001$

\*ANOVA based only on problem drinkers within sample. Error df vary due to alternative missing value patterns.  
† $r$  refers to a Pearson product-moment correlation whereas  $r_s$  refers to a Spearman rank-order correlation.  
‡Degrees of freedom vary across tests because of different missing data patterns that were incurred.

0.89. Thus, the subscales had similar specificities at their respective cut scores, but differed in their sensitivities with Irresistibility exhibiting the highest sensitivity to problem drinking and Interference showing the lowest sensitivity.

### Construct Validation

The results of the construct validation analyses are displayed in Table 5. Specifically, the relationship of the A-OCDS subscales to preference for alcohol at parties, alcohol consumption, and family history are shown. The Interference subscale score did not differ significantly for preference for alcohol at parties. On the other hand, those who preferred to have alcohol at parties had significantly higher Irresistibility scores (unequal variances  $t = 10.19$ ;  $df = 95.74$ ;  $p < 0.001$ ) as well as Irresistibility-C scores (unequal variances  $t = 8.12$ ;  $df = 100.69$ ;  $p < 0.001$ ) than those not preferring alcohol at parties.

Spearman and Pearson correlation coefficients relating alcohol consumption variables to the A-OCDS subscales were computed. The A-OCDS Interference score correlated moderately with average

number of drinks/week ( $r = 0.41$ ;  $p < 0.001$ ). The correlation between the Irresistibility score and average number drinks/week was high ( $r = 0.76$ ;  $p < 0.001$ ) and when the Irresistibility score was corrected, the correlation remained relatively high ( $r = 0.66$ ;  $p < 0.001$ ). The frequency of days using alcohol in the past 30 days was moderately correlated with the Interference ( $r = 0.49$ ;  $p < 0.001$ ) and Irresistibility-C ( $r = 0.68$ ;  $p < 0.001$ ) subscales and highly correlated with the Irresistibility ( $r = 0.81$ ;  $p < 0.001$ ) subscale. A similar pattern was seen for the correlation between frequency of alcohol use in the past year.

The relationship between family history and problem drinking to the A-OCDS subscales was explored using analysis of variance (ANOVA) techniques. An ANOVA on A-OCDS Interference scores revealed a main effect of problem drinking ( $F(1,219) = 28.322$ ,  $p < 0.001$ ), however no main effect of family history, or interaction between family history and problem drinking. A similar pattern was present for the Irresistibility ( $F(1,213) = 149.478$ ,  $p < 0.001$ ) and Irresistibility-C ( $F(1,215) = 98.337$ ,  $p < 0.001$ ) scores such that



there was a main effect of problem drinking but no main effect of family history or interaction between family history and problem drinking.

## DISCUSSION

The primary findings of our study are that: (a) certain dimensions of "craving" expressed as obsessive and compulsive phenomenon related to drinking exist in adolescents/young adults, (b) these constructs may be measured by the A-OCDS, (c) the A-OCDS is two-dimensional with internally consistent subscales and (d) the A-OCDS is specific and sensitive to identifying problematic drinking, at least as defined in this sample.

The obsessive and compulsive dimensions of alcohol craving as described in adult populations<sup>3,4,9,20</sup> also exists in adolescent/young adults. In our sample of adolescents/young adults aged 17–20, the A-OCDS was shown to detect obsessive thoughts about alcohol and compulsive drinking behaviors. Incorporation of the adolescents' conceptualization of this phenomenon into a revised instrument provided a valuable means for exploring this aspect of alcohol use behavior within this sample. Furthermore, the A-OCDS was found to be acceptable and easily comprehended (i.e., could be completed in 5 min and required a fifth grade reading level).

There appear to be two primary dimensions of the A-OCDS, which are identified by two internally consistent subscales: namely, the Interference and Irresistibility subscales. Further delineation of the Irresistibility subscale into the Irresistibility-C by the removal of the quantity/frequency questions related to drinking does not appreciably compromise the internal consistency. Moreover, these results indicate that the quantity/frequency of alcohol consumption is but one indicator of Irresistibility with regards to alcohol use. It may be reasoned that the quantity/frequency of alcohol consumption may only in part determine the cognitive and behavioral impact of drinking in this sample.

The A-OCDS may be used to help identify a problem drinker. The a priori definition of a problem drinker in this sample was set as two or more episodes of drinking five or more drinks in one sitting in the past two weeks. Both the Irresistibility and Irresistibility-C subscales revealed higher sensitivity than the Interference subscale in identifying a problem drinker, although the subscales did not differ substantially in their specificities. This finding sug-

gests that the Irresistibility subscale may be a useful screen for problem drinking in the adolescent/young adult population. Problem drinking adolescents are often missed during assessment given the episodic, binge pattern of drinking in which they engage. An Irresistibility score of 6 may serve to alert the clinician or researcher that the individual may be a problem drinker. The ease of administration and the time efficiency of the A-OCDS may facilitate its use as a screen in conjunction with other assessment instruments in evaluating adolescents/young adults with alcohol use disorders.

## Limitations

These results should be considered exploratory. The sample was based on convenience. It consisted of nontreatment-seeking adolescents and young adults aged 17–20 from a single small college. Thus, the generalizability of the A-OCDS to other populations remains to be confirmed. This sample was used for discriminant analysis and normalization of the data. Future exploration of the A-OCDS will be performed specifically in adolescents aged 12–18—those who seek treatment as well as those not seeking treatment. Additionally, the variables used for the construct validation were limited to those on the CORE survey since the A-OCDS was given concurrently with CORE survey. More elaborate data for construct validation should be collected in future studies.

## CONCLUSION

This study begins to address a potentially important aspects of adolescent substance abuse involving certain obsessive-compulsive aspects of alcohol related craving. Given the ease of administration and apparent high acceptability, the A-OCDS may be a useful tool for identifying problem drinking in adolescents as well as detecting impairment in function related to drinking. It is not a diagnostic instrument although it may be used in the assessment process to identify problem drinking and may be used to track an individual's progress over time. As such, it may assist in the assessment and treatment of adolescents and young adults.

## APPENDIX

### A-OCDS Self-Rated Questionnaire

Note: questionnaire is copyright material and may not be used without permission from the author.

Directions: The questions below ask you about your drinking alcohol (beer, wine, whiskey, etc.) and your attempts to control your drinking **since your last drink**. Please circle the number next to the statement that best applies to you.

1. How much of your time in a day when you're not drinking alcohol do you have ideas, thoughts, strong desires or images related to drinking?
  - (0) None
  - (1) Less than 1 hour a day
  - (2) 1/2 of the day
  - (3) More than 1/2 of the day
  - (4) Most of the day
2. How frequently do these thoughts occur?
  - (0) Never
  - (1) Less than 8 times a day
  - (2) Greater than 8 times a day
  - (3) Greater than 8 times a day and during most hours of the day
  - (4) Too many to count and all day
3. How much do these ideas, thoughts, strong desires, or images related to drinking alcohol get in the way of your social activities, family activities or school work? Are there things that you don't do because of them (i.e., sports, family outings, etc.)?
  - (0) Thoughts of drinking never get in the way—I can function.
  - (1) Thoughts of drinking get in the way a little bit, but they cause me no problems.
  - (2) Thoughts of drinking definitely get in the way, but I can manage.
  - (3) I have trouble with family, friends or school because of these thoughts.
  - (4) Thoughts of drinking totally get in the way of friendships and family life.
4. When you are not drinking alcohol, how upset are you about these ideas, thoughts, strong desires or images of alcohol?
  - (0) I don't get upset.
  - (1) I am a little upset, but I can make it.
  - (2) I get upset a lot, but I can manage.
  - (3) I get upset a lot, and it is hard to manage.
  - (4) I get so upset I cannot manage.
5. How hard do you try to resist these thoughts of alcohol or try to ignore or get the thoughts of alcohol out of your mind when you are not drinking? (Tell how hard you try, not whether you succeed or fail.)
  - (0) My thoughts are so minimal; I don't have to try to resist.
  - (1) I make an effort to always resist.
  - (2) I try to resist most of the time.
  - (3) I make some effort to resist.
  - (4) I give in to all such thoughts without attempting to control them, even when I don't want to give in.
  - (5) I always give in to these thoughts.
6. How successful are you in stopping or changing these thoughts about alcohol when you are not drinking?
  - (0) I am completely successful in stopping or changing these thoughts if I have them.
  - (1) I am usually able to stop or change these thoughts when I make an effort or concentrate.
  - (2) I am sometimes able to stop or change these thoughts.
  - (3) I am rarely successful in stopping these thoughts, but I can change these thoughts if I try real hard.
  - (4) I am rarely able to change these thoughts even for a moment.
7. How many drinks of alcohol do you drink each day?
  - (0) None
  - (1) Less than 1 drink per day
  - (2) 1–2 drinks per day
  - (3) 3–7 drinks per day
  - (4) 8 or more drinks per day
8. How many days each week do you drink alcohol?
  - (0) None
  - (1) No more than 1 day per week
  - (2) 2–3 days per week
  - (3) 4–5 days per week
  - (4) 6–7 days per week
9. How much does your drinking alcohol get in the way of your school work? Do you miss school, use alcohol before or at school or experience a decline in grades? (If you are not currently in school, how much of your performance would be affected if you were in school?)
  - (0) Drinking never gets in the way—I can function normally.
  - (1) Drinking gets in the way a little bit with

- my school work, but my overall performance is okay.
- (2) Drinking definitely gets in the way with my school performance, but I can still manage.
- (3) Drinking really hurts my school performance.
- (4) Drinking totally gets in the way of my school performance.
10. How much does your drinking alcohol get in the way of your social or family functioning? (Have you missed or stopped attending family functions, changed friends, lost interest in hobbies?)
- (0) Drinking never gets in the way—I can function normally.
- (1) Drinking gets in the way a little bit with my social or family activities, but my overall performance is okay.
- (2) Drinking definitely gets in the way with my social or family activities, but I can still manage.
- (3) Drinking really gets in the way of my social or family performance.
- (4) Drinking totally gets in the way of my social or family performance.
11. If you were prevented from drinking alcohol when you wanted to drink, how irritable, upset or nervous would you become?
- (0) I would not feel irritable, upset or nervous.
- (1) I would become a little irritable, upset or nervous.
- (2) The irritability would increase, but I can still manage.
- (3) I would get very irritable, nervous or upset.
- (4) I would get so irritable, nervous or upset that I would lose it.
12. How hard do you try to avoid using alcoholic beverages? (Only tell how hard you try to avoid drinking, not whether you were successful or not.)
- (0) My drinking is so minimal; I don't need to try that hard.
- (1) I make an effort to always avoid drinking.
- (2) I try to avoid drinking most of the time.
- (3) Sometimes I make an effort to avoid drinking.
- (4) I usually give in to drinking without trying to control or stop it even when I don't want to give in.
- (5) I always give in to all drinking.
13. How strong is your desire to drink alcoholic beverages?
- (0) I have no desire.
- (1) I have some desire to drink.
- (2) I have a strong desire to drink.
- (3) I have a very strong desire to drink.
- (4) The desire to drink is overwhelming.
14. How much control do you have over drinking alcohol?
- (0) I have total control over drinking. I can take it or leave it.
- (1) I am usually able to control my drinking without difficulty.
- (2) It is difficult for me to control my drinking, but I often do.
- (3) I must drink and can only put it off if I try very hard.
- (4) It is hard to put off drinking even for a moment.

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